

43

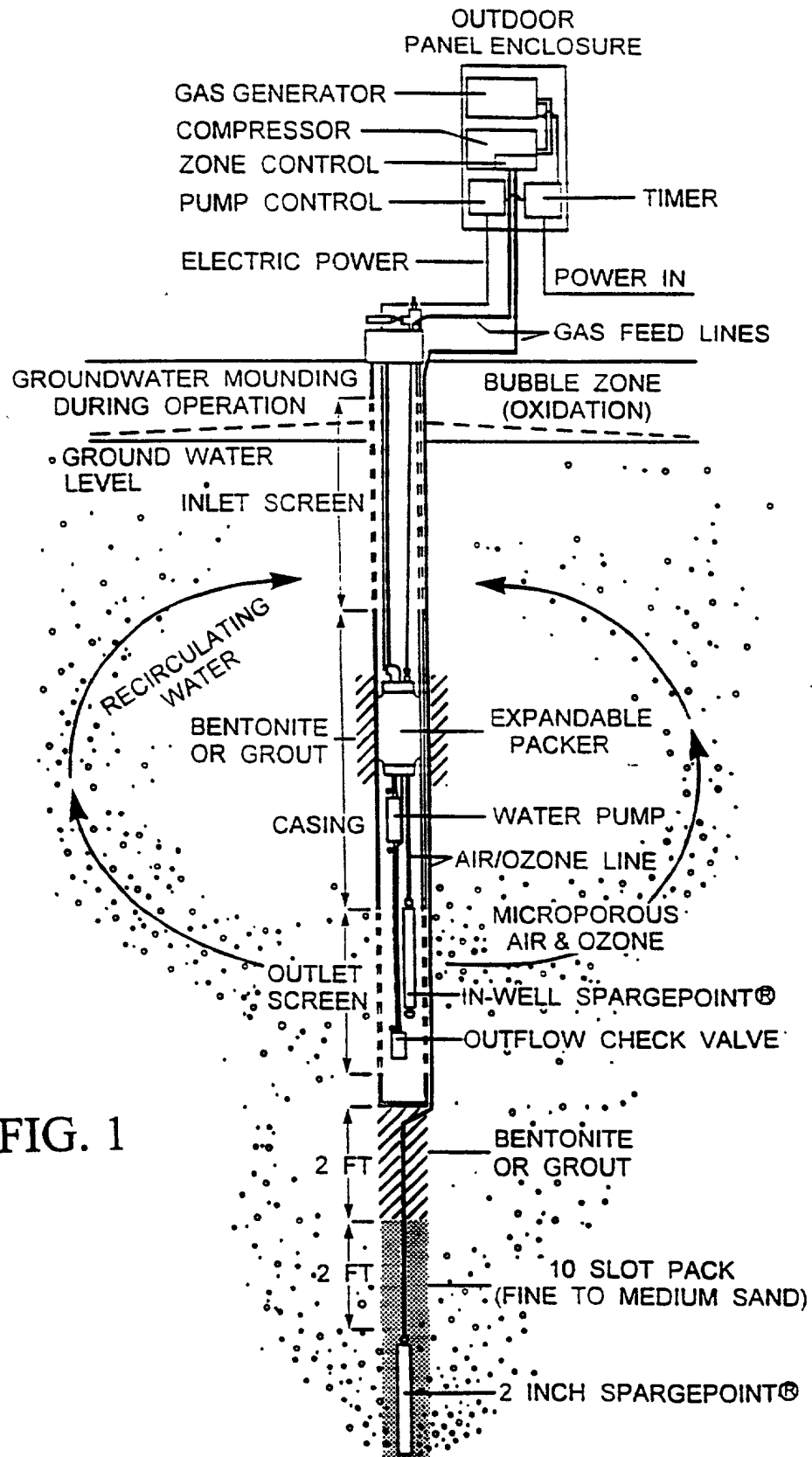


FIG. 1

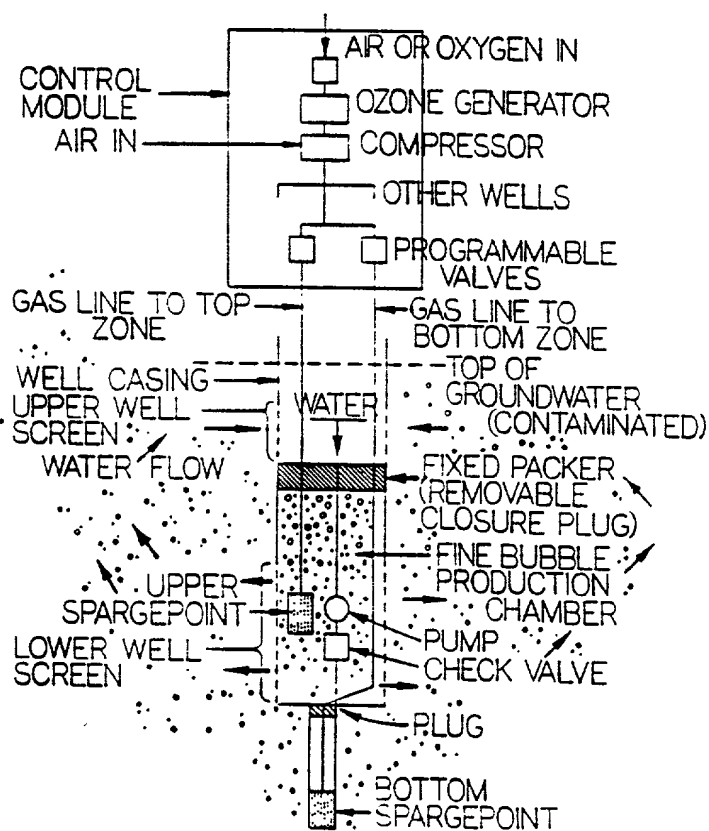


FIG. 2

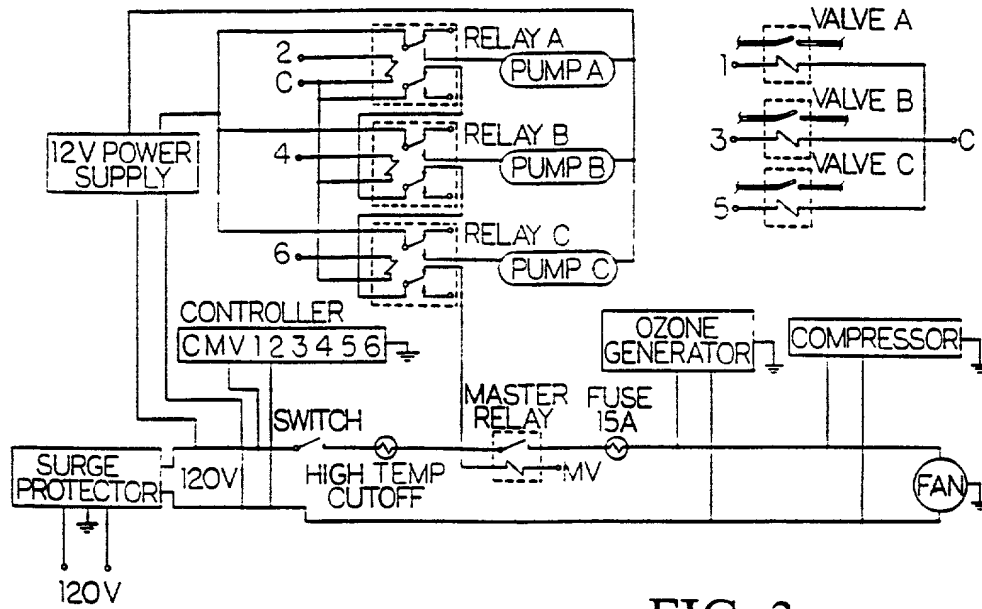


FIG. 3

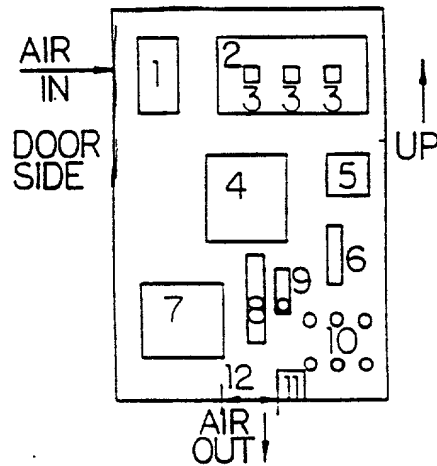


FIG. 4

- 1 AC TO DC POWER CONVERTER (OR TRICKLE CHARGED LEAD ACID BATTERY)
- 2 OZONE GENERATOR
- 3 WELL GAS RELAYS (3 WELLS SHOWN)
- 4 COMPRESSOR
- 5 MASTER RELAY
- 6 15A MAIN FUSE
- 7 PROGRAMMABLE TIMER-CONTROLLER
- 8-POWER STRIP
- 9 GAS REGULATOR AND PRESSURE GAGE
- 10 SOLENOID MANIFOLD (NUMBER DEPENDS ON SERIES AND NUMBER WELLS)
- 11 GROUND FAULT INTERRUPTOR
- 12 COOLING FAN

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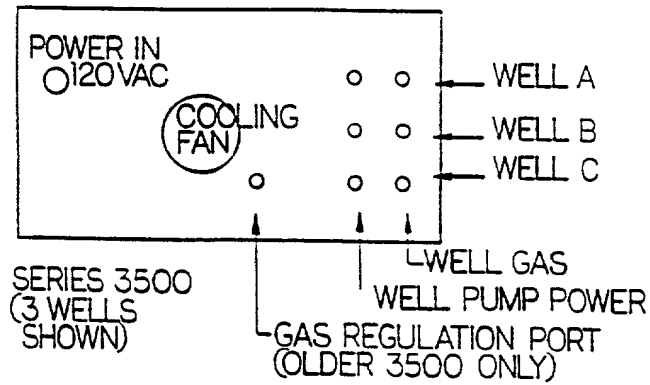


FIG. 5A

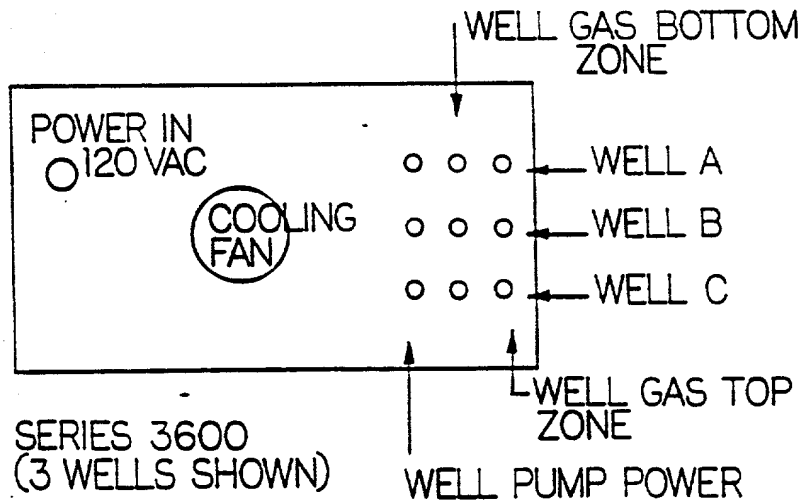


FIG. 5B

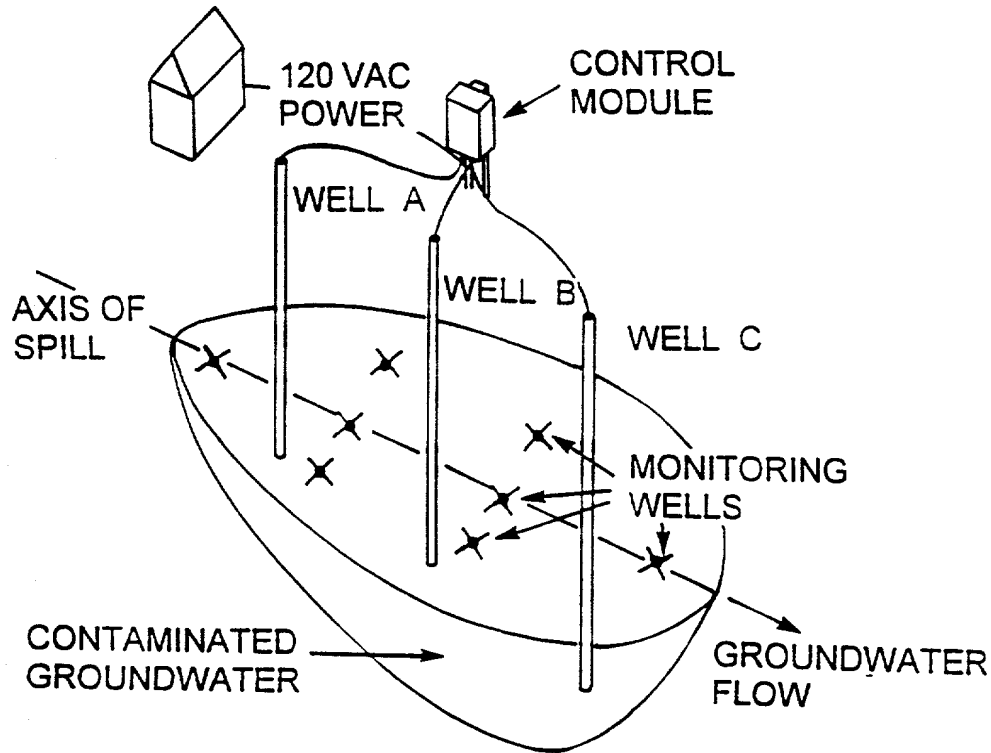


FIG. 6

205223 25F6660

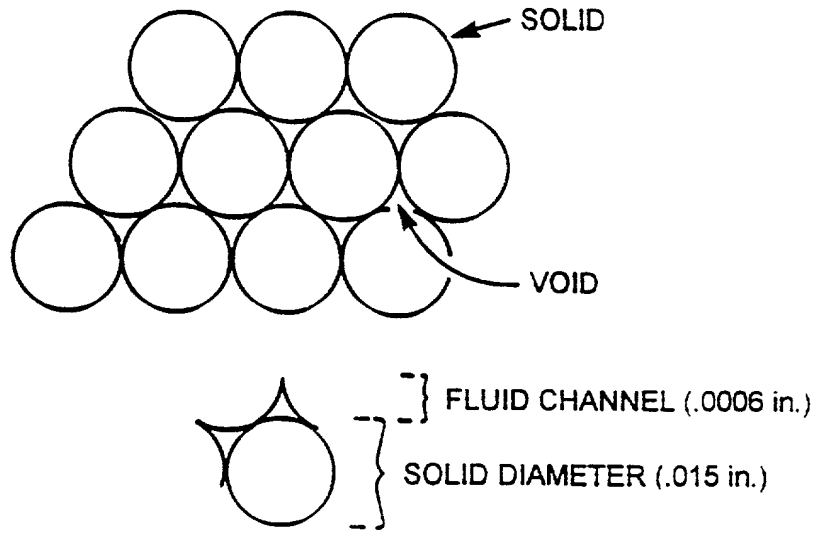
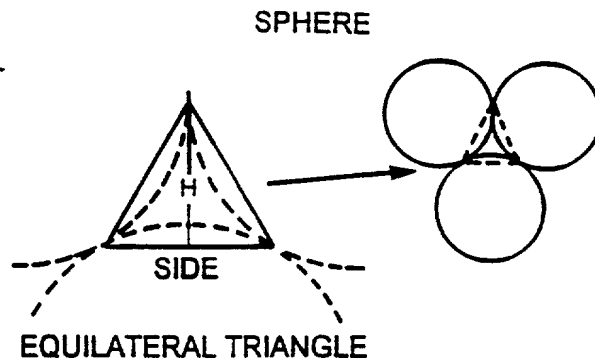
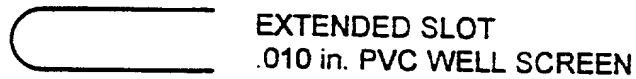
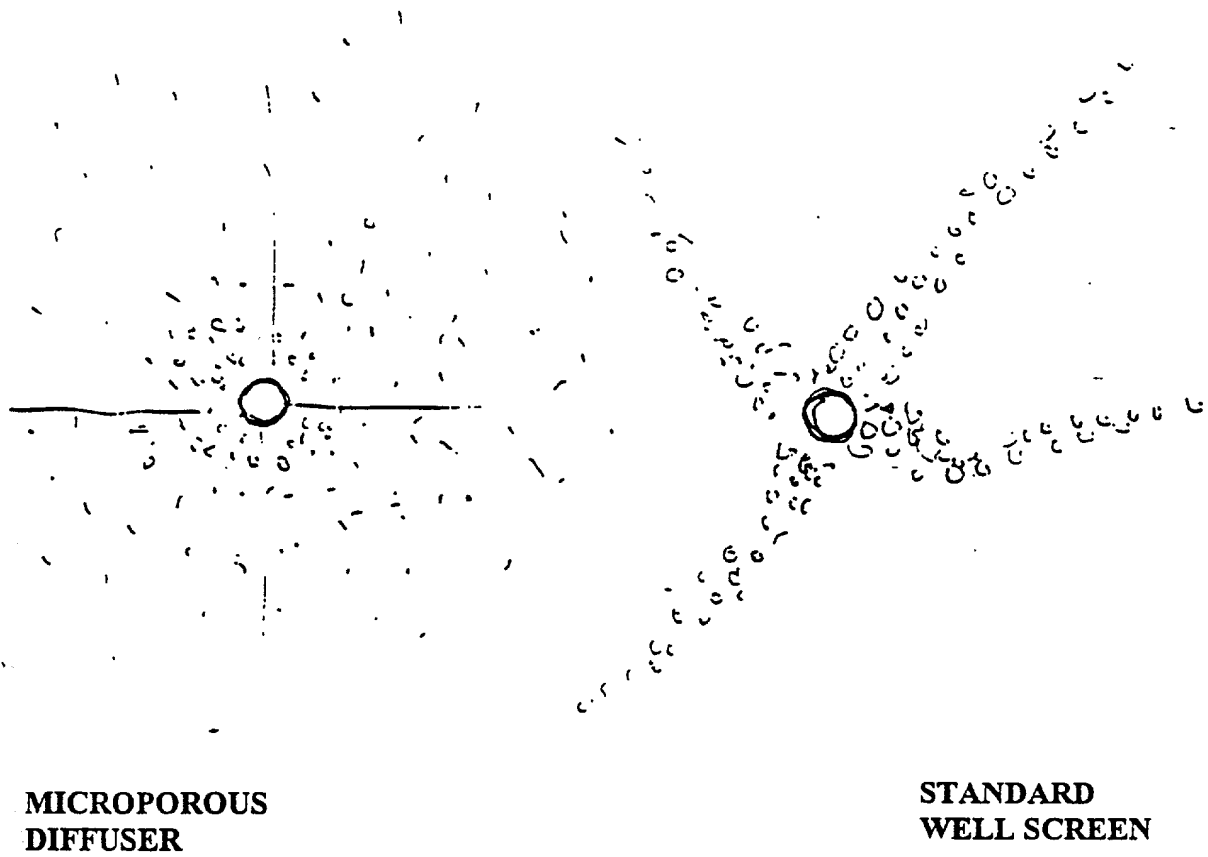


FIG. 7





**FIG. 8**



Permeability of Glass Beads Compared  
 with Permeability of Soil Fractions

Mean Bead Diameter (mm)	Pore Space (microns)	Permeability (Darcy)	Gas Conductivity (cm/sec)	Equivalent Soil Classification
2.000	860	1000	1.000	Very coarse sand
1.200	516	250	0.250	Coarse sand
0.655	281	147	0.147	Medium coarse sand
0.327	140	85	0.085	Medium sand
0.167	72	22	0.022	Fine-medium sand
0.083	36	9	0.009	Fine sand
0.041	18	5	0.005	Very fine sand
0.020	9	2	0.002	Very fine silty sand

Modified from Anderson, et.al., 1987<sup>2</sup>

FIG. 9

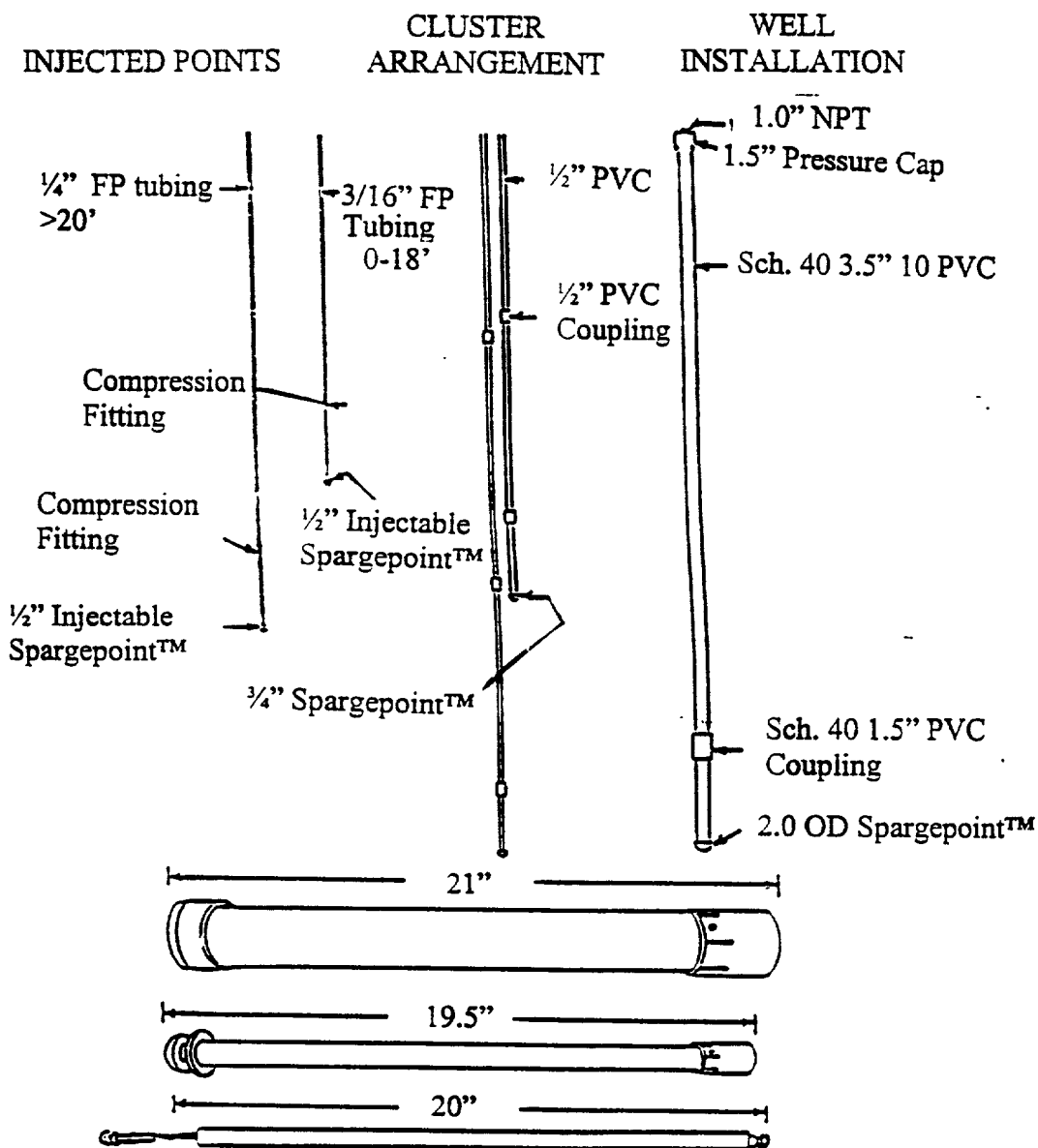


FIG. 10

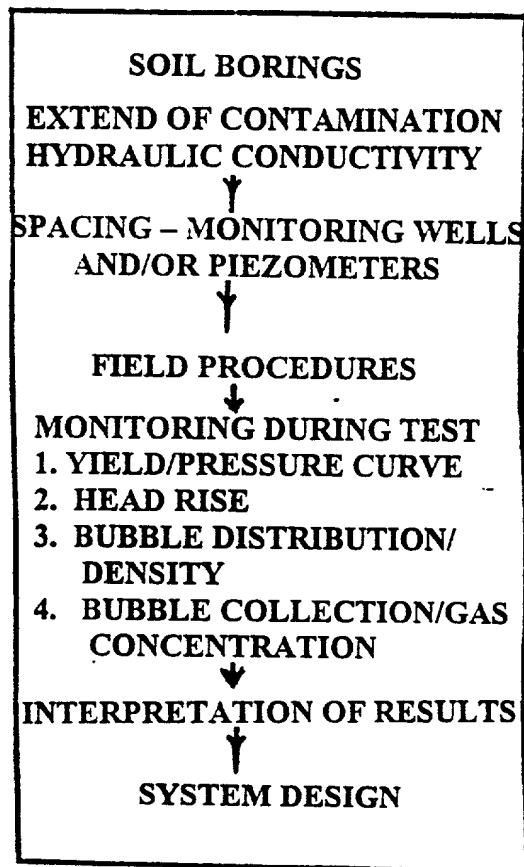


FIG. 11

SPARGEPOINT<sup>TM</sup> TEST ASSEMBLY  
1/2" OR 3/4" POINT WITH 1 INCH CASING

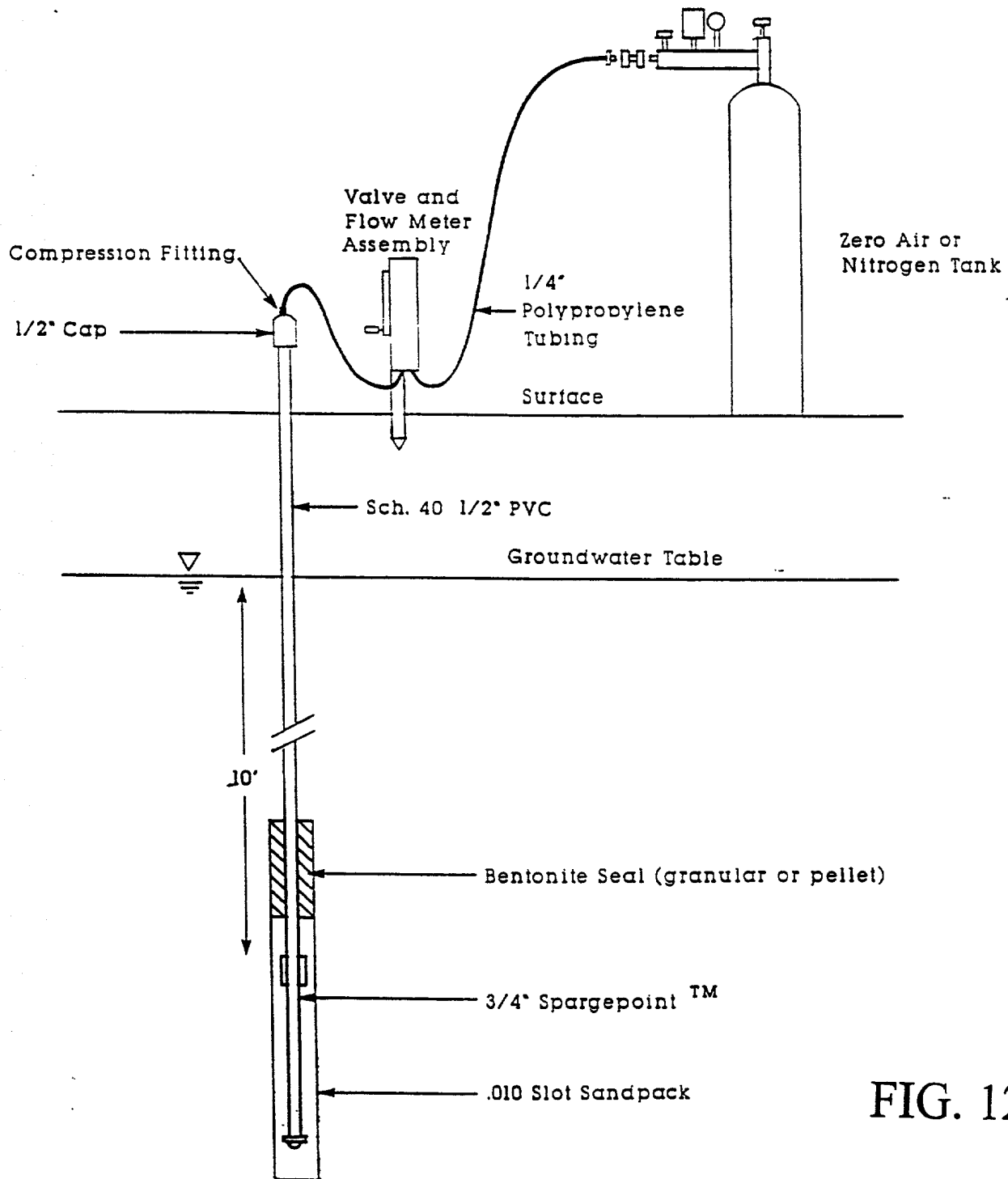


FIG. 12

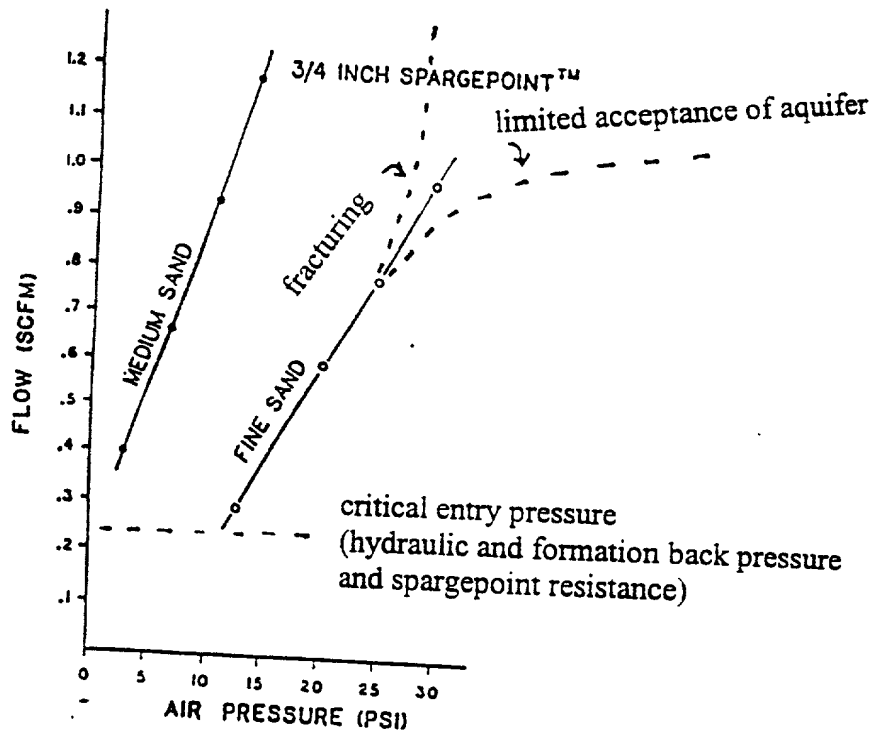


FIG. 13

### INFLUENCE OF DEPTH AND PRESSURE ON RADIUS OF BUBBLE ZONE

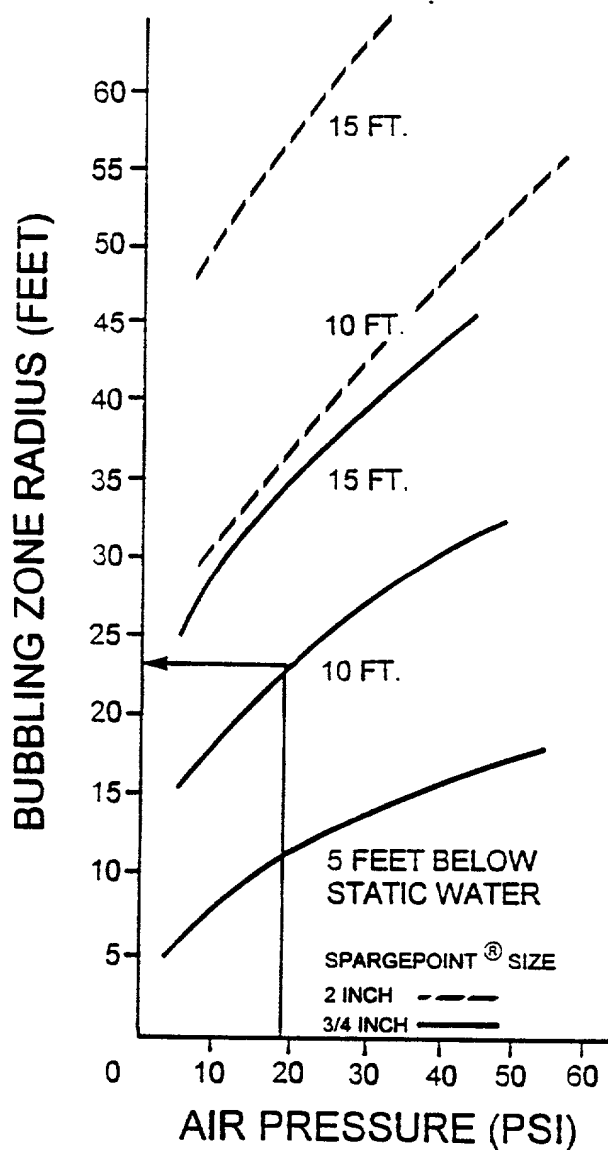


FIG. 14

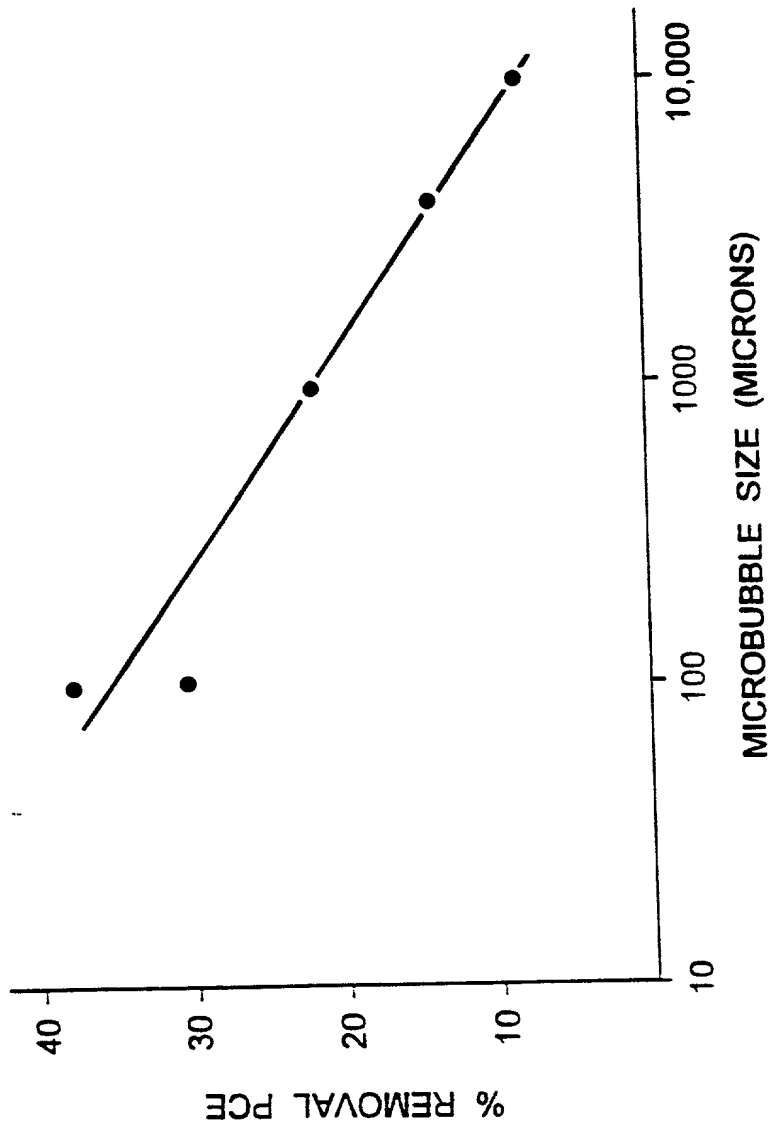


FIG. 15

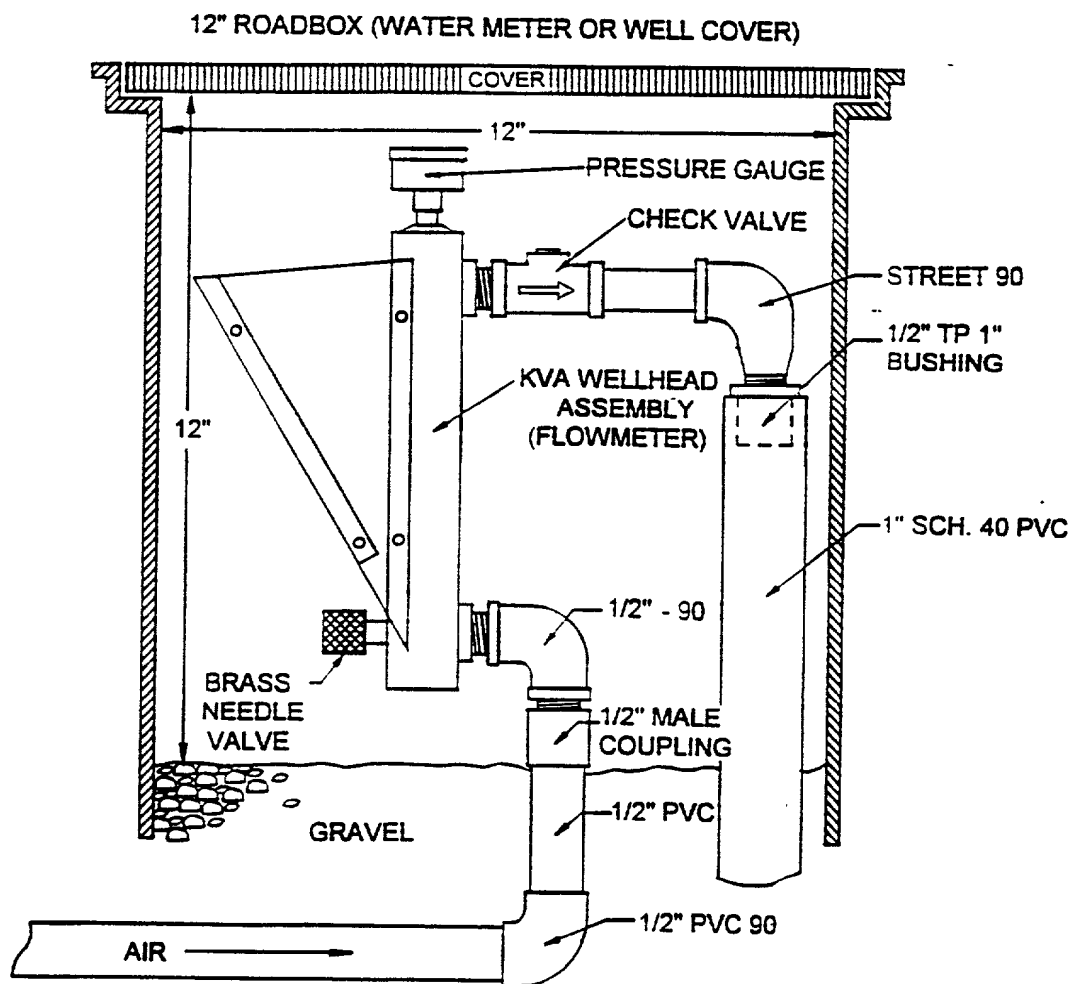
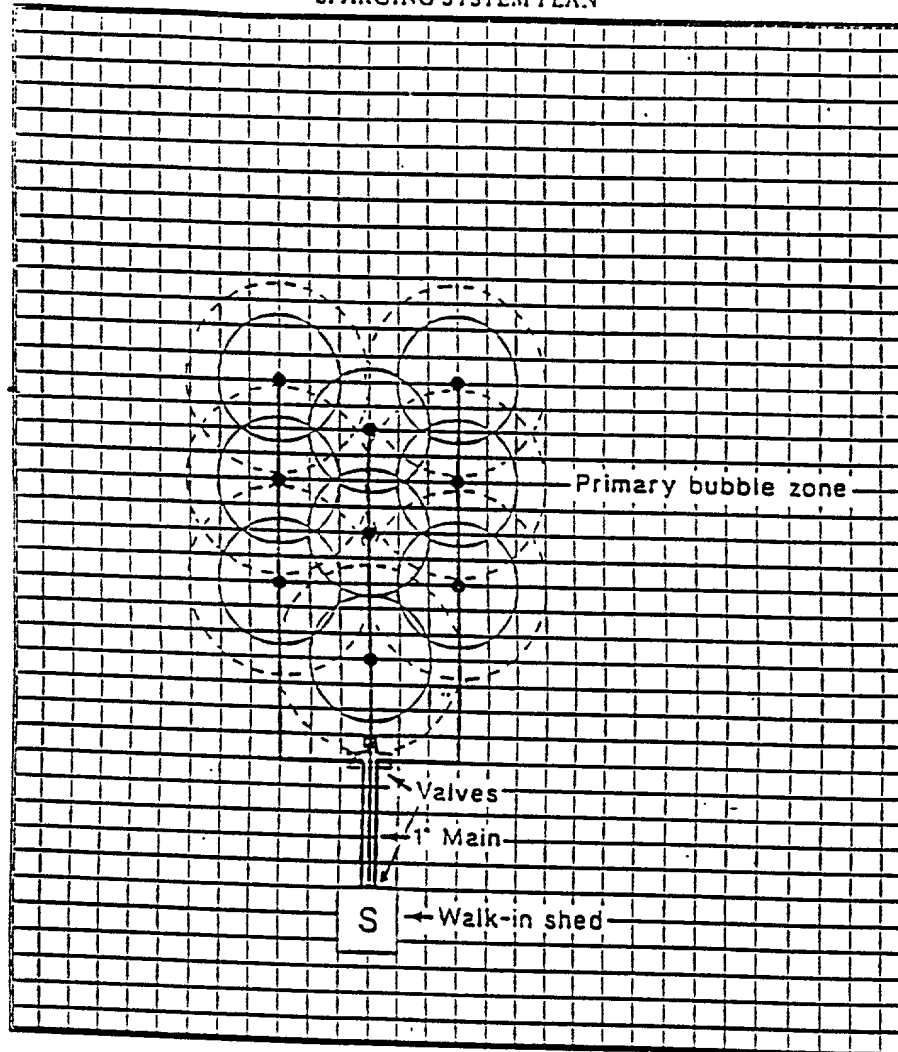


FIG. 16

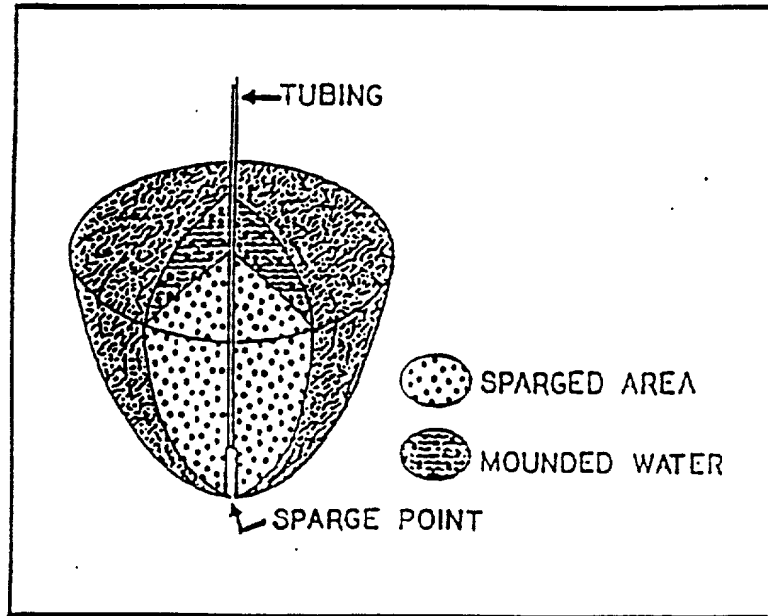


SPARGING SYSTEM PLAN



Size of Sparge Area	100 x 150 ft	Size of SVE Area	150 x 200 ft
Use of Zone Control?	3 zones	Size of SVE System	150 scfm
Number of Spargepoints™	9	Depth to Water	10 ft
Soil Conditions	MEDIUM SAND	Type of Contaminant	BTEX

FIG. 17



**FIG. 18**

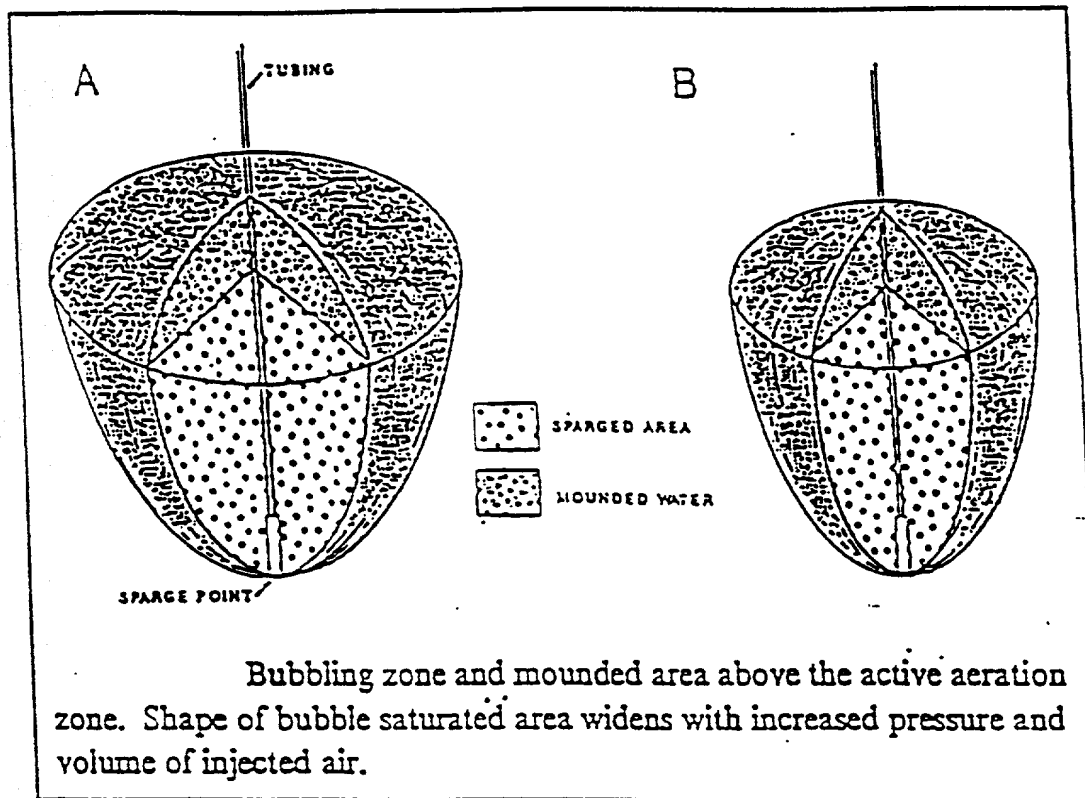
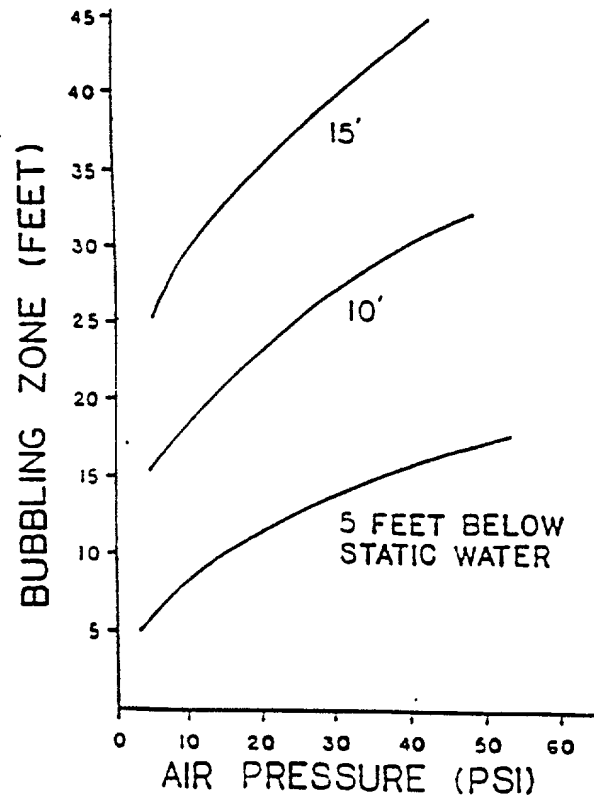
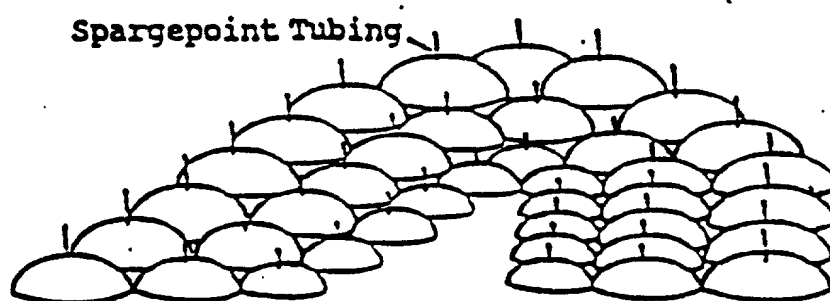


FIG. 19



**FIG. 20**

Sequential rise in water table from bubbling. Concentric zones permit containing Any floating contaminant.



**FIG. 21**

Sequential rise in water table from bubbling. Concentric zones permit containing any floating contaminant.

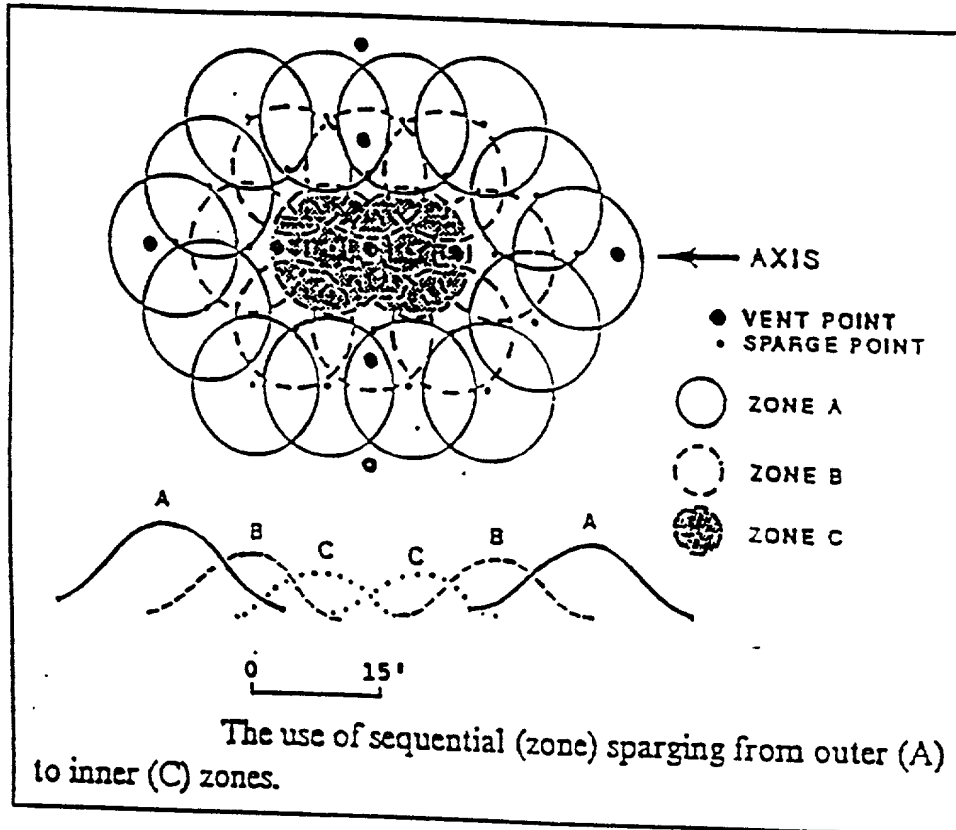


FIG. 22

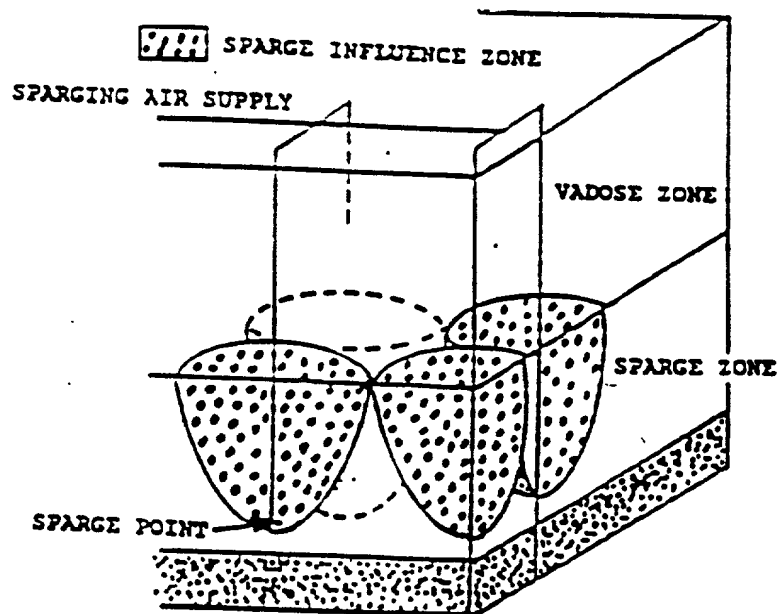
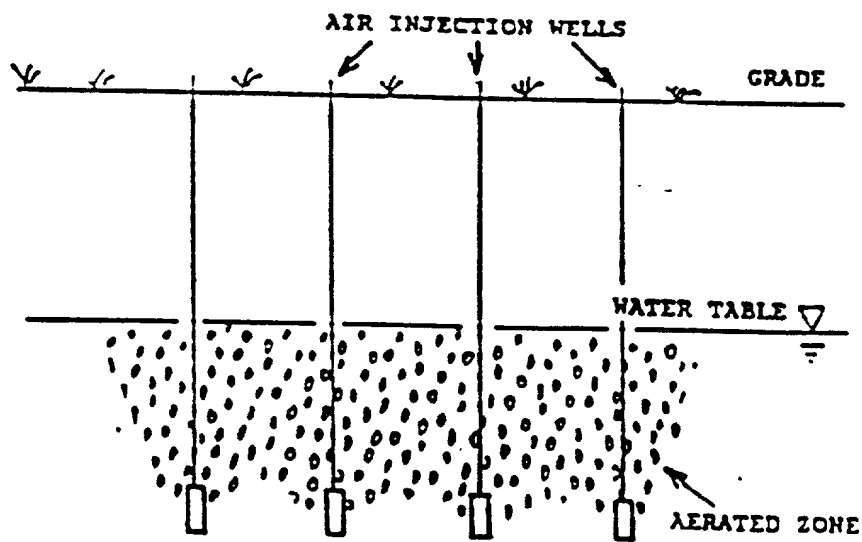


FIG. 23A



**FIG. 23B**



205220 "OUTSIDE WEATHER SOIL"

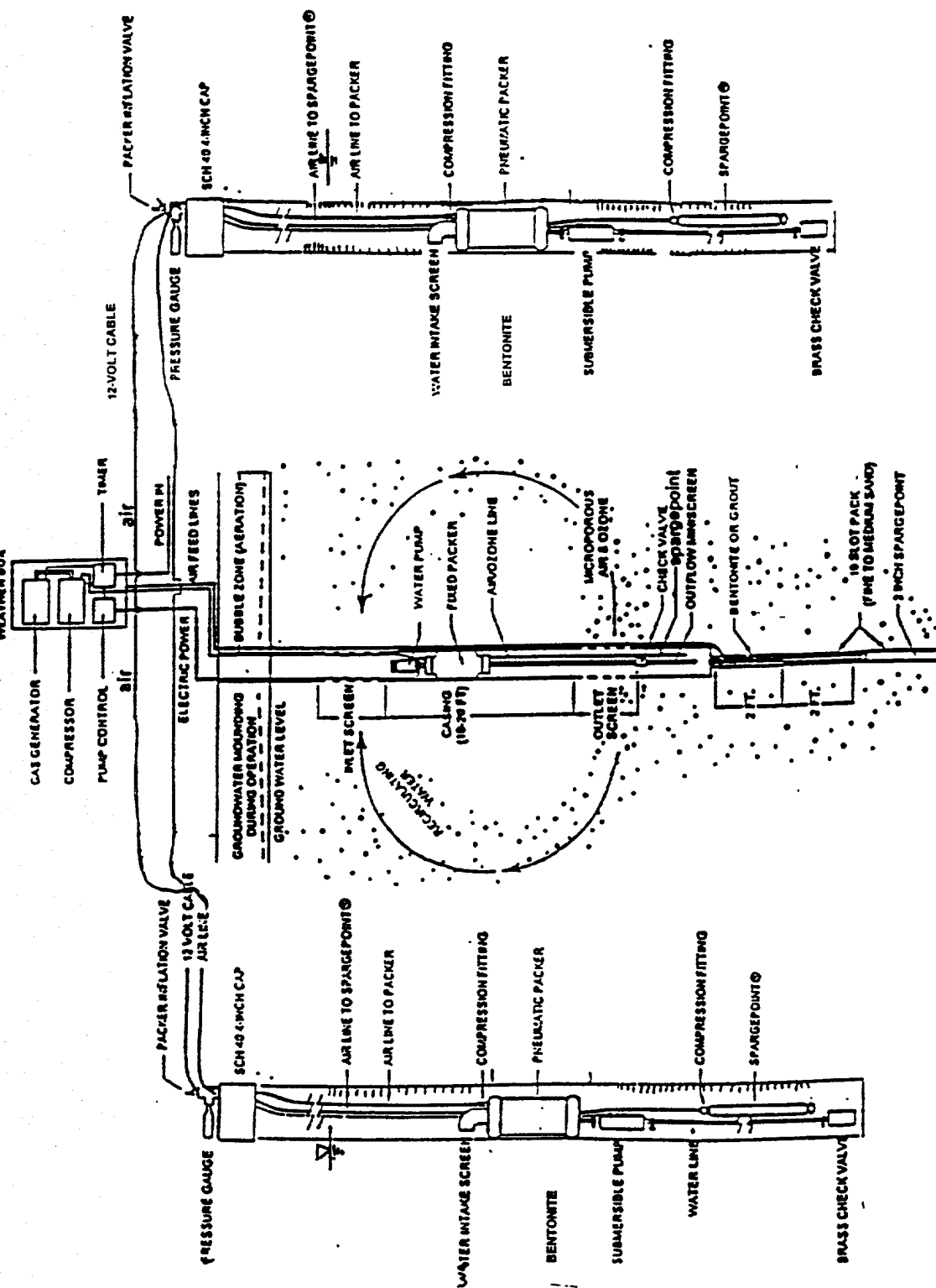


FIG. 24

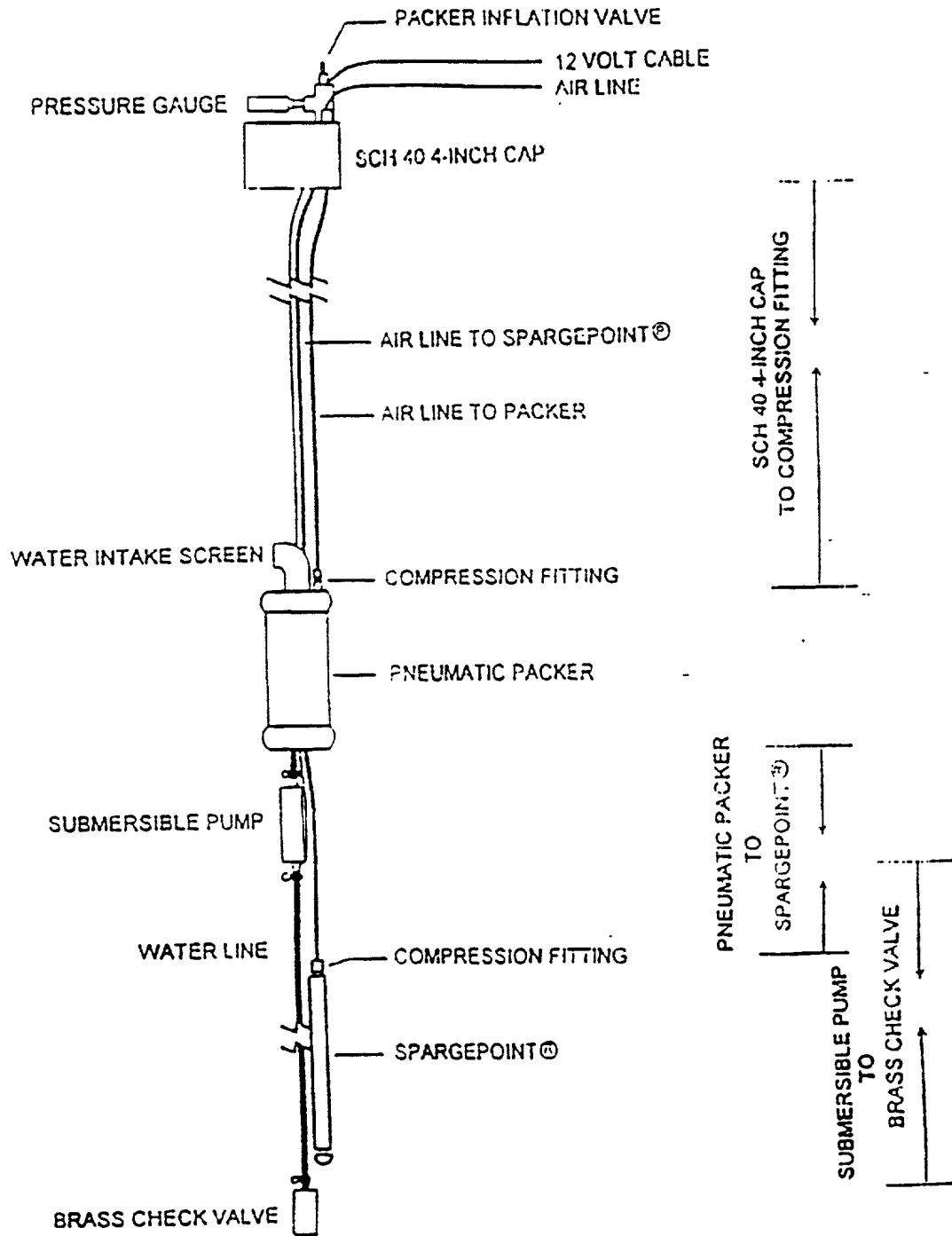
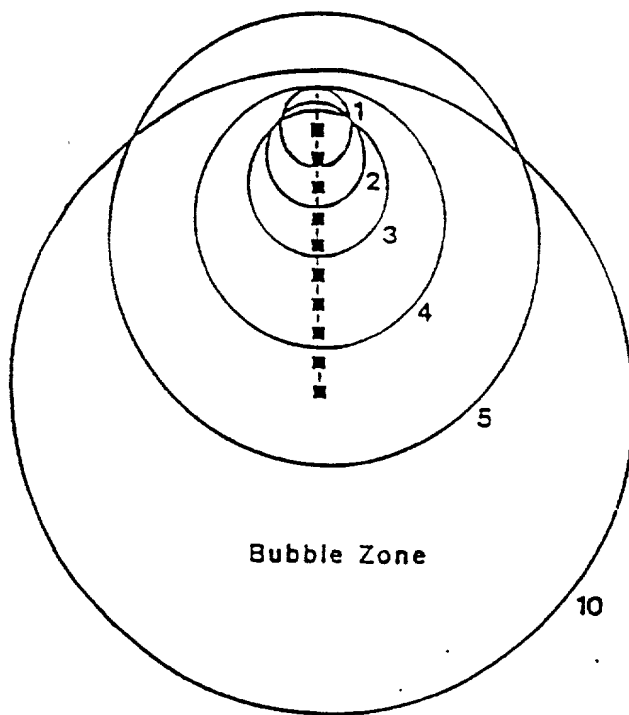


FIG. 25

**FIG. 26**

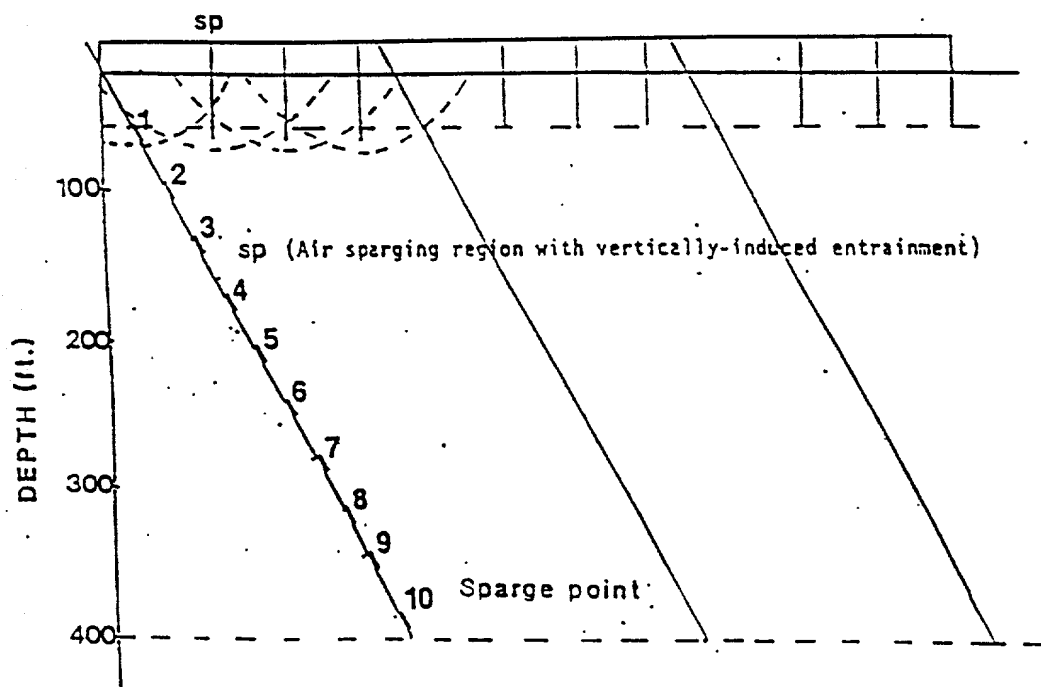


FIG. 27

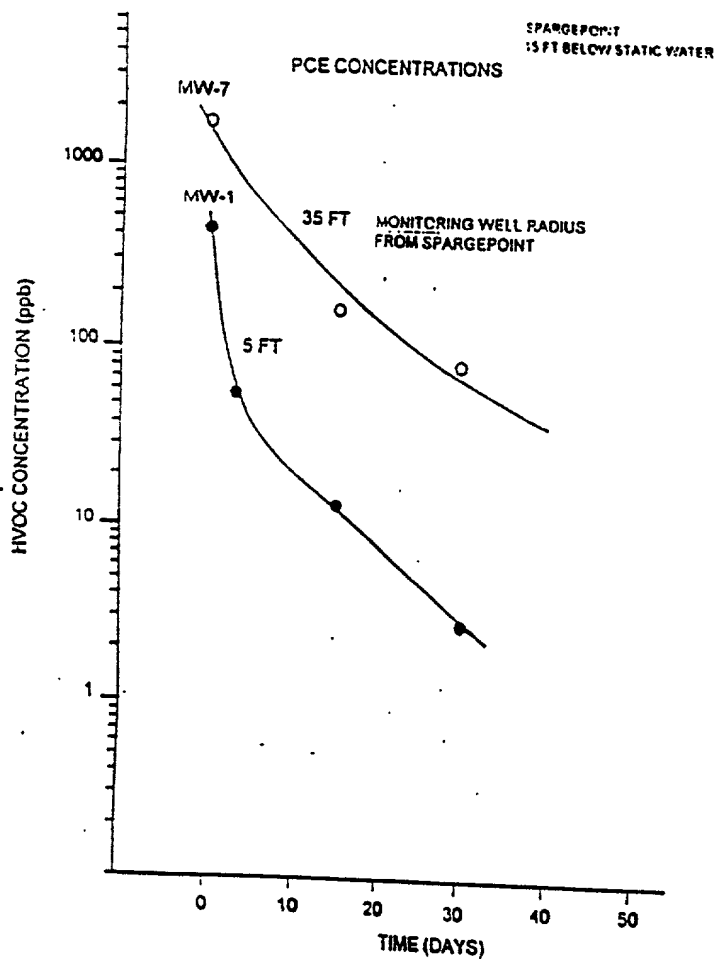


FIG. 28

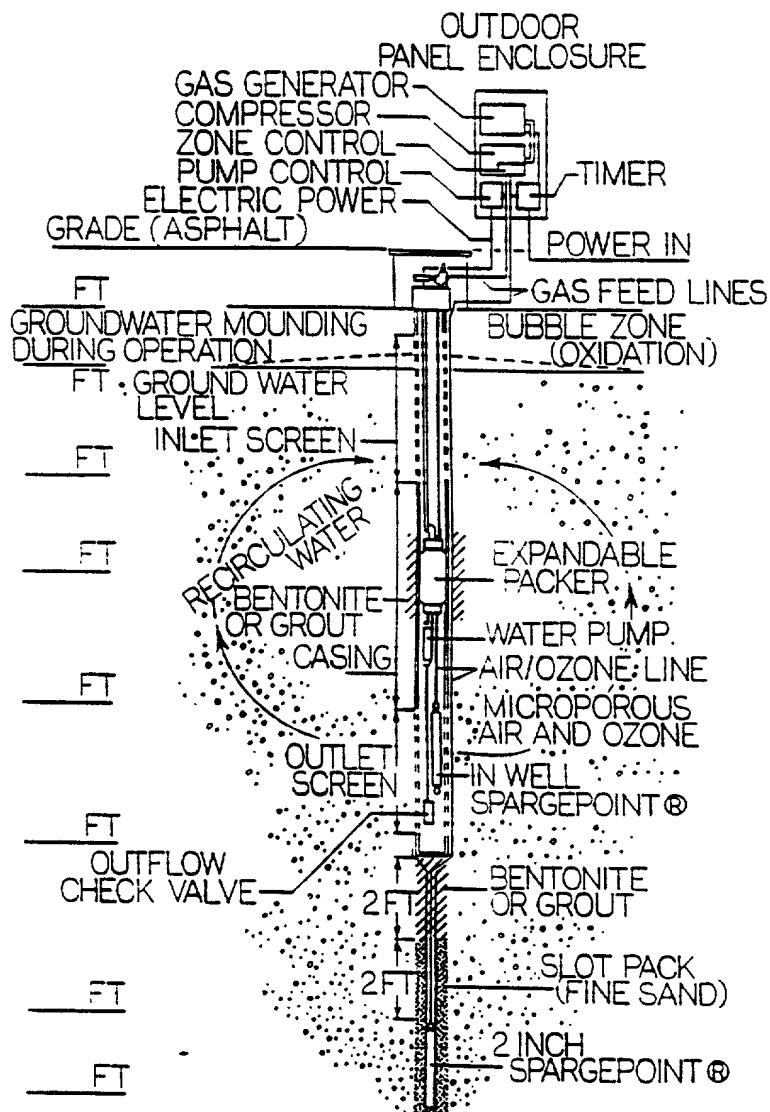
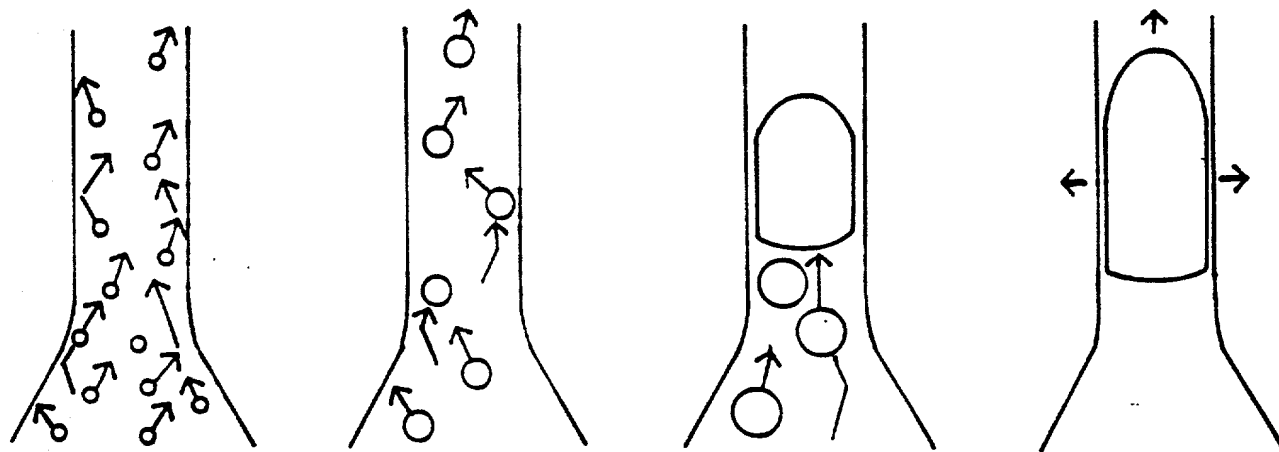


FIG. 29



Movement of microbubbles through saturated pores as diameter of bubble increases. showing coalescing.

FIG. 30

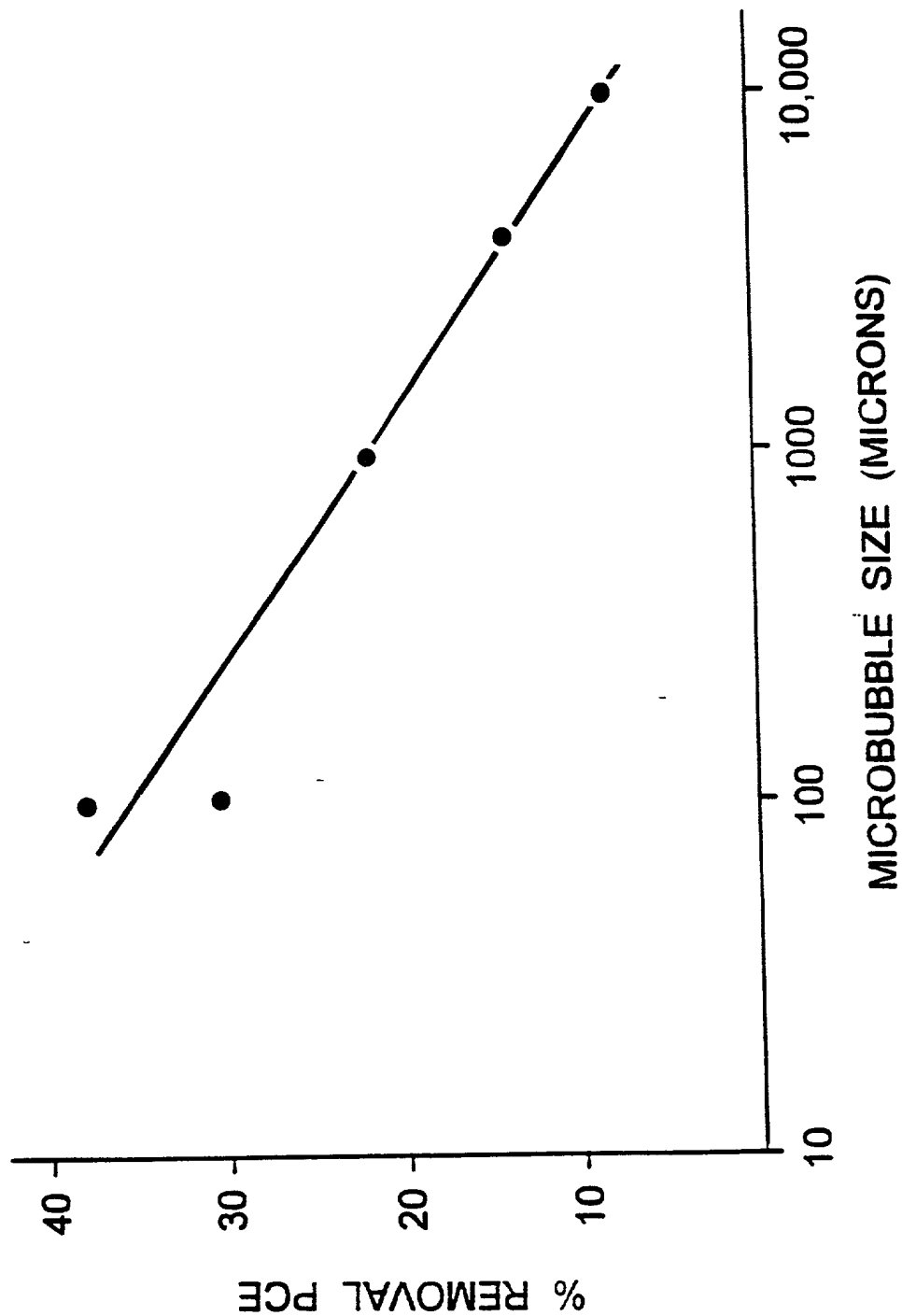
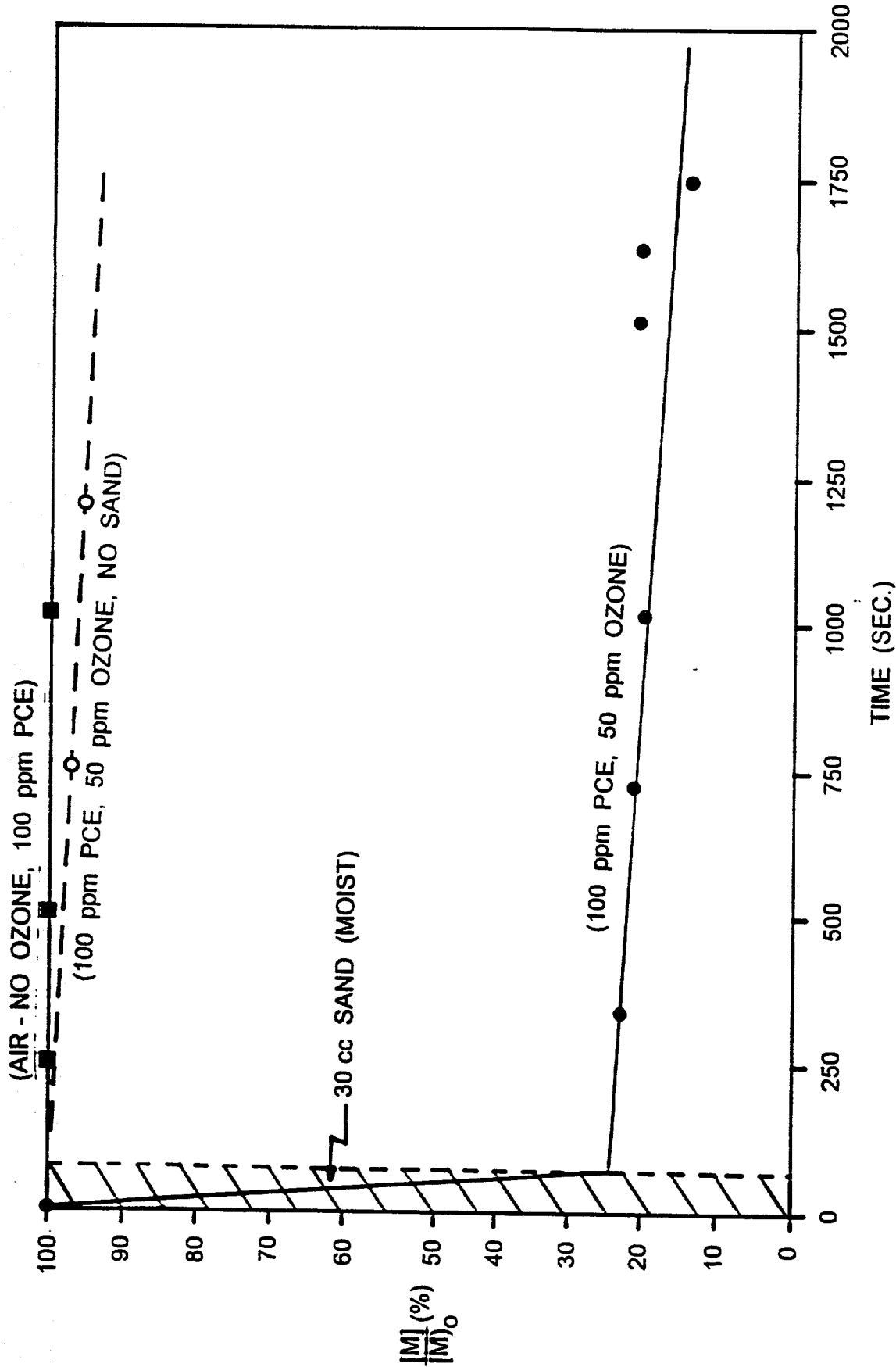


FIG. 31





**FIG. 32**

# OZONE AQUEOUS REACTIONS

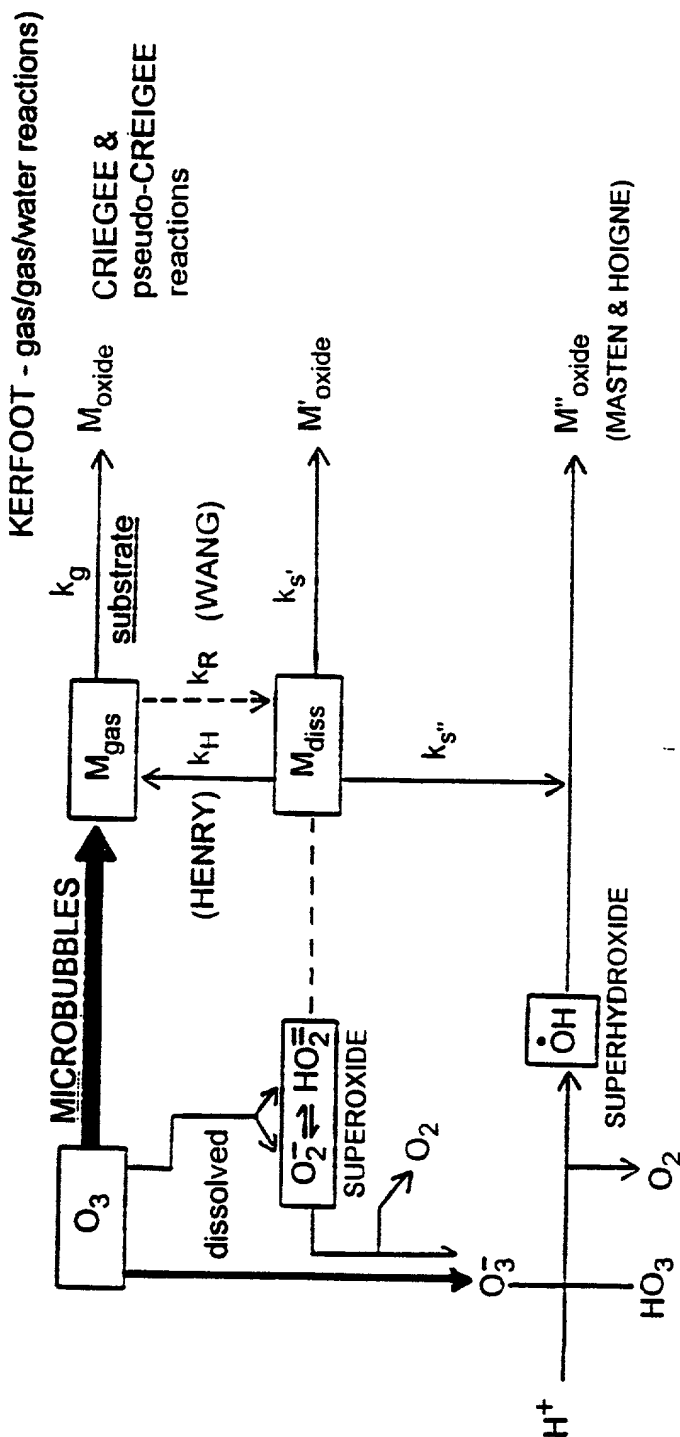


FIG. 33

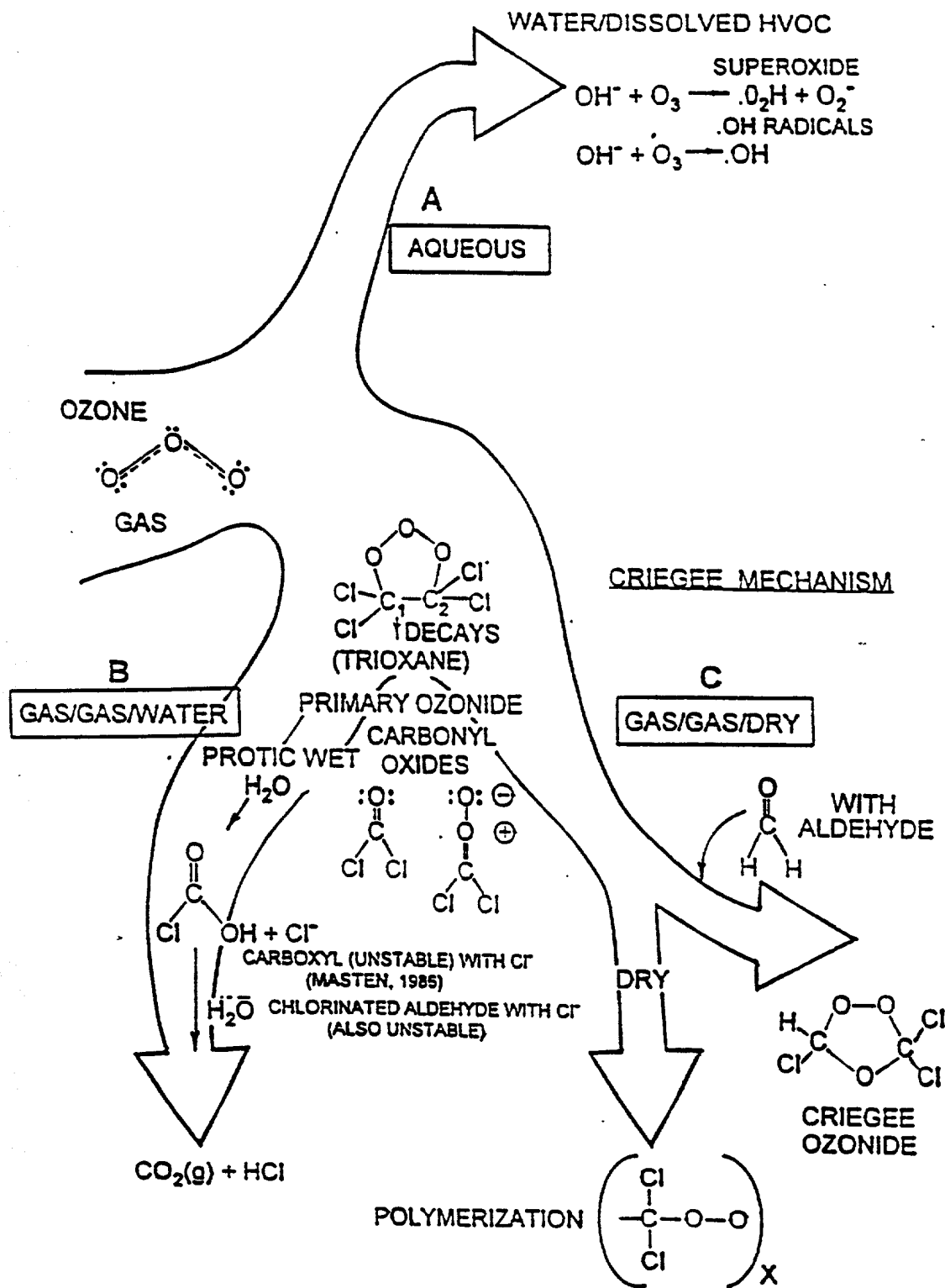


FIG. 34

MICROBUBBLE GENERATOR  
COLUMN CHAMBER

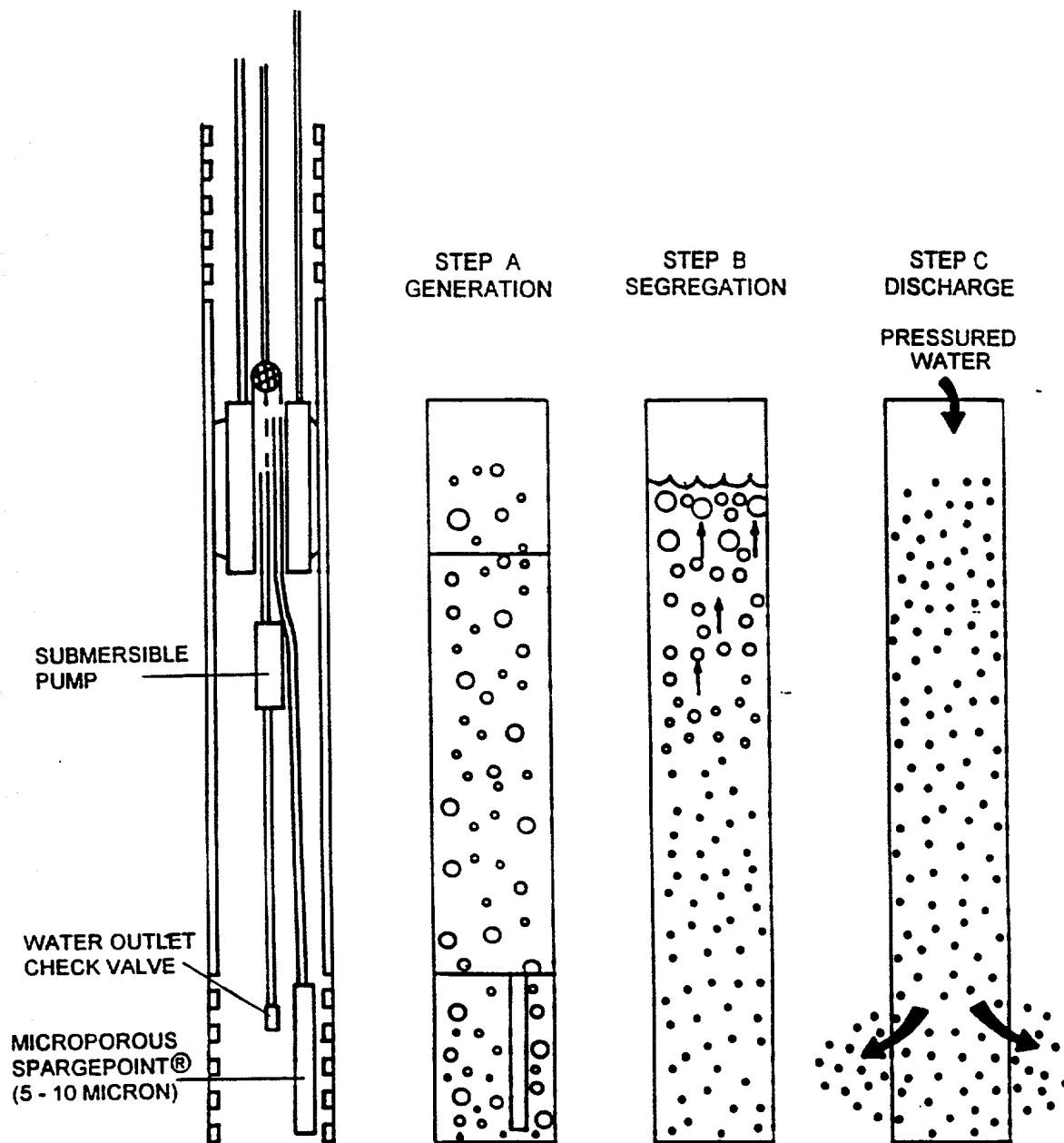
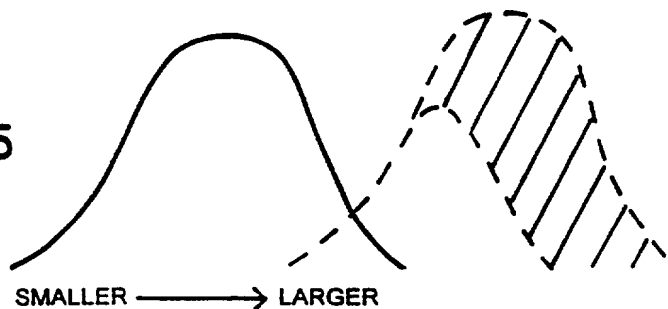


FIG. 35



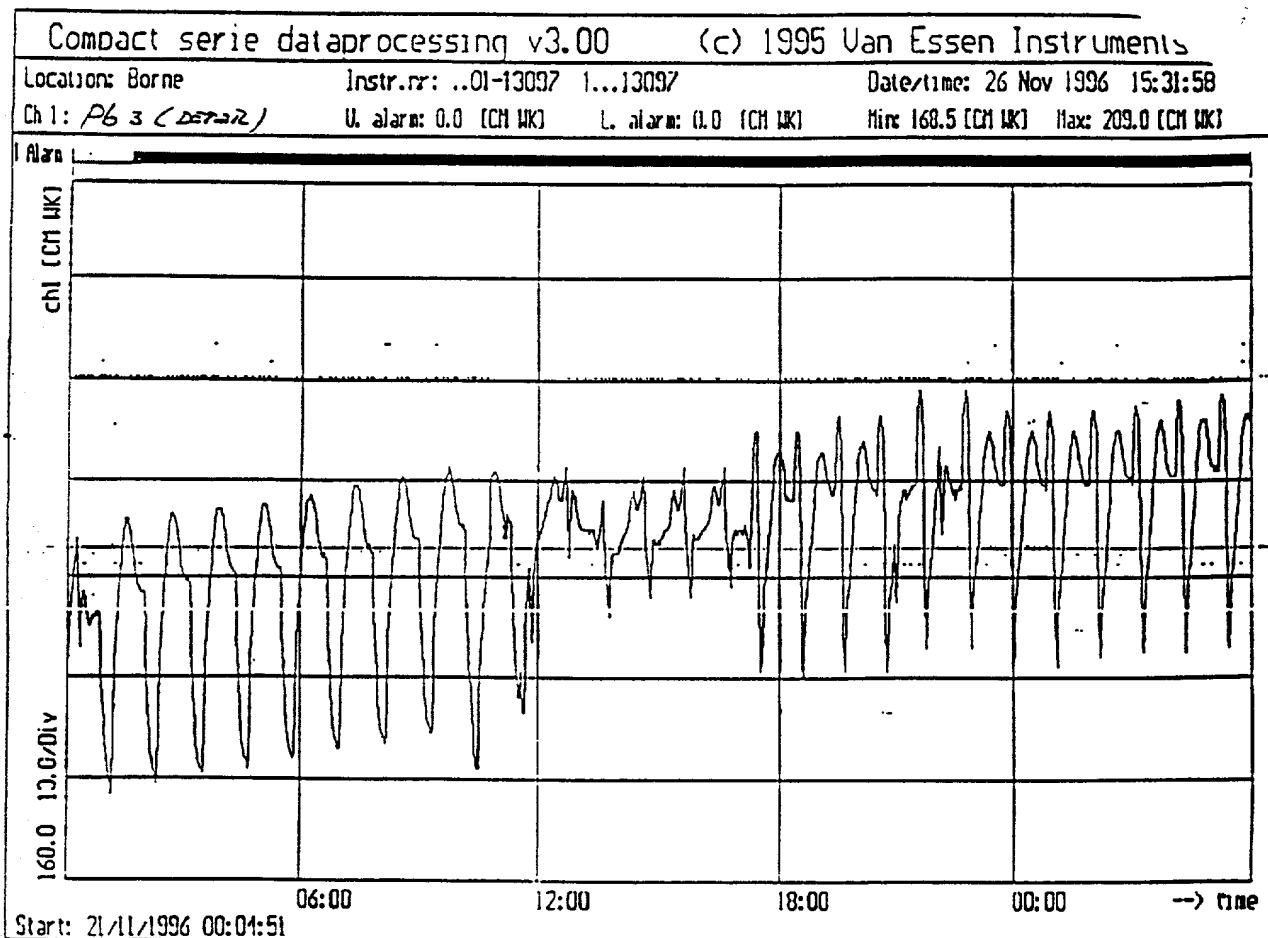


FIG. 36

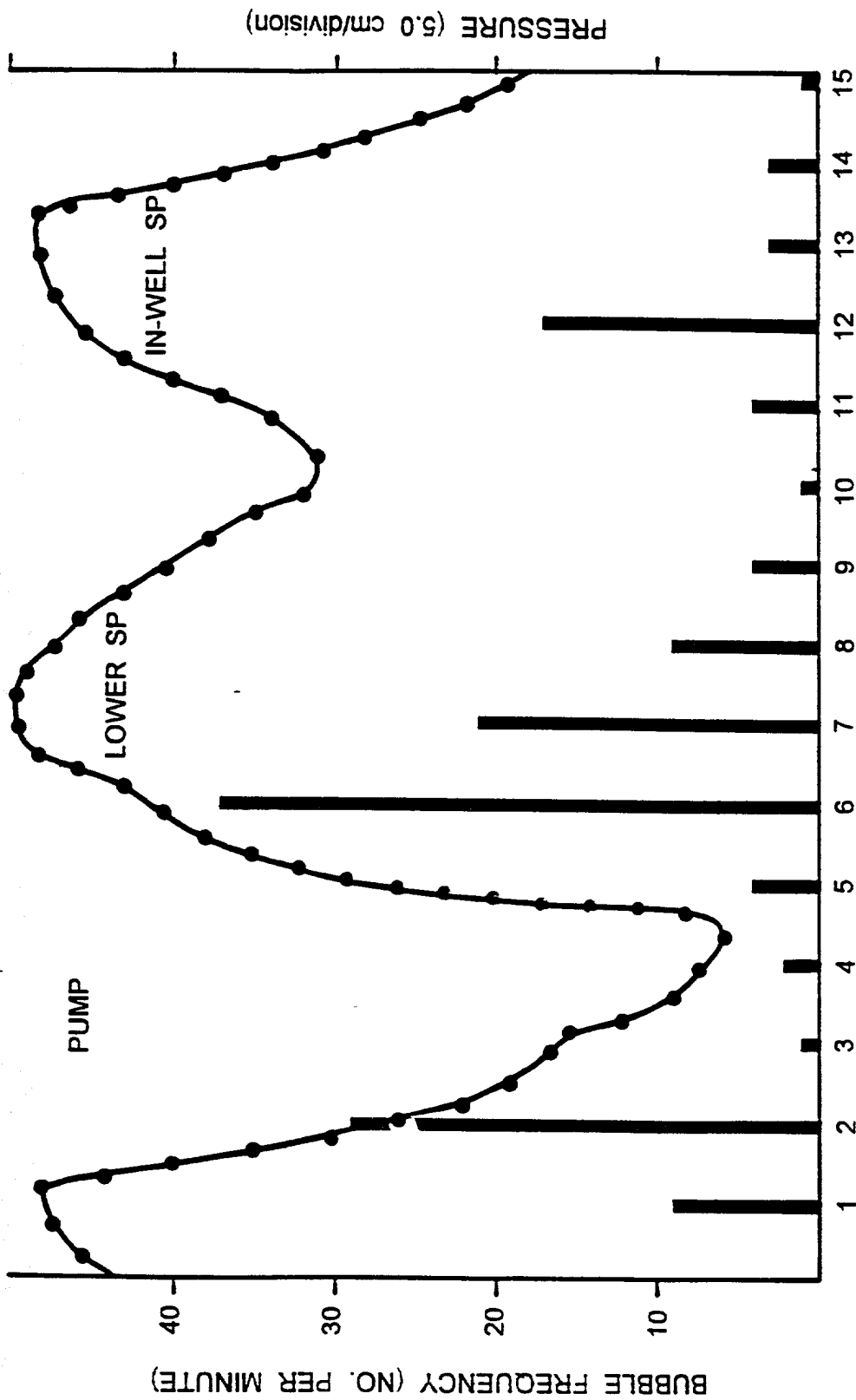
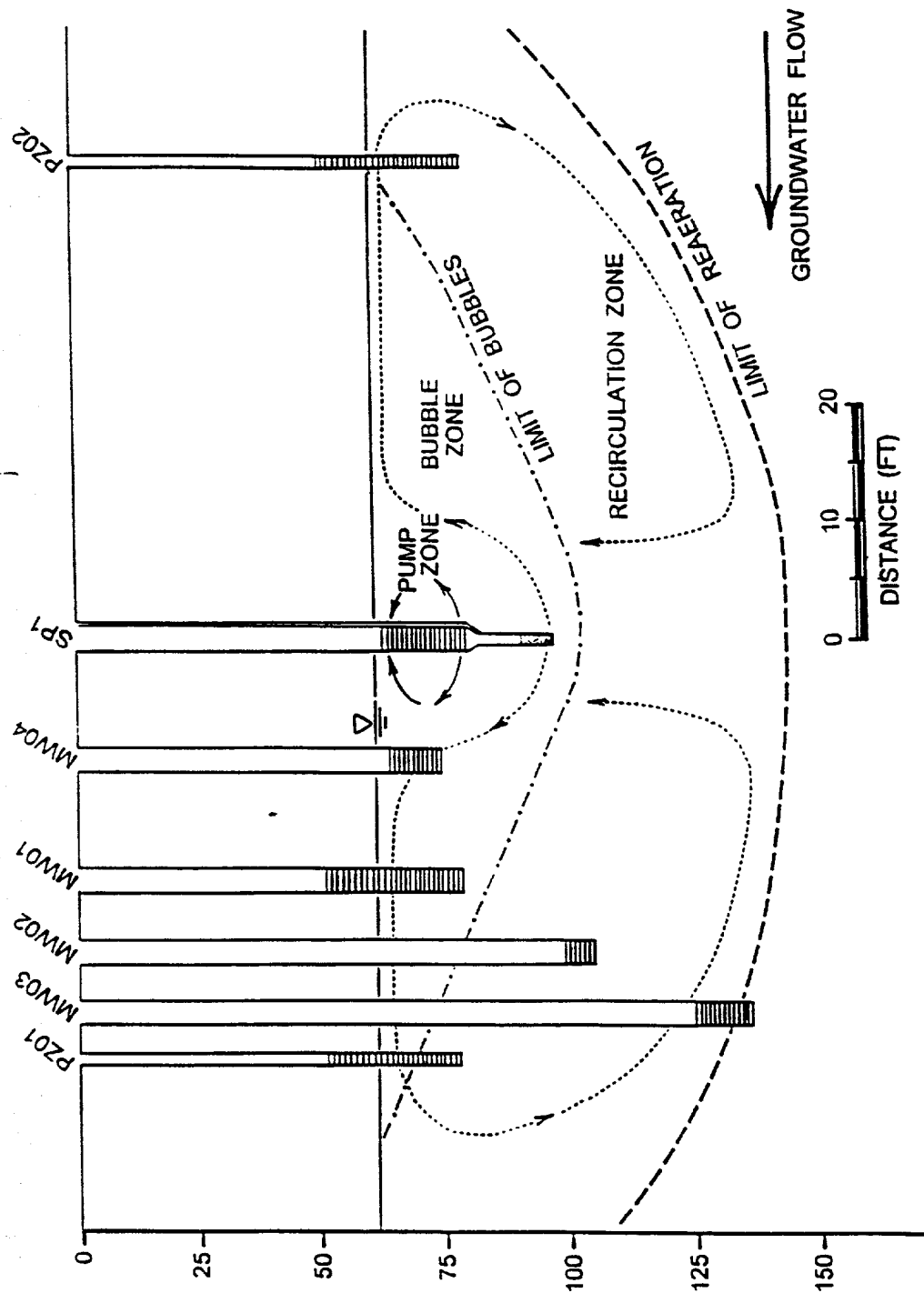


FIG. 37



**FIG. 38**

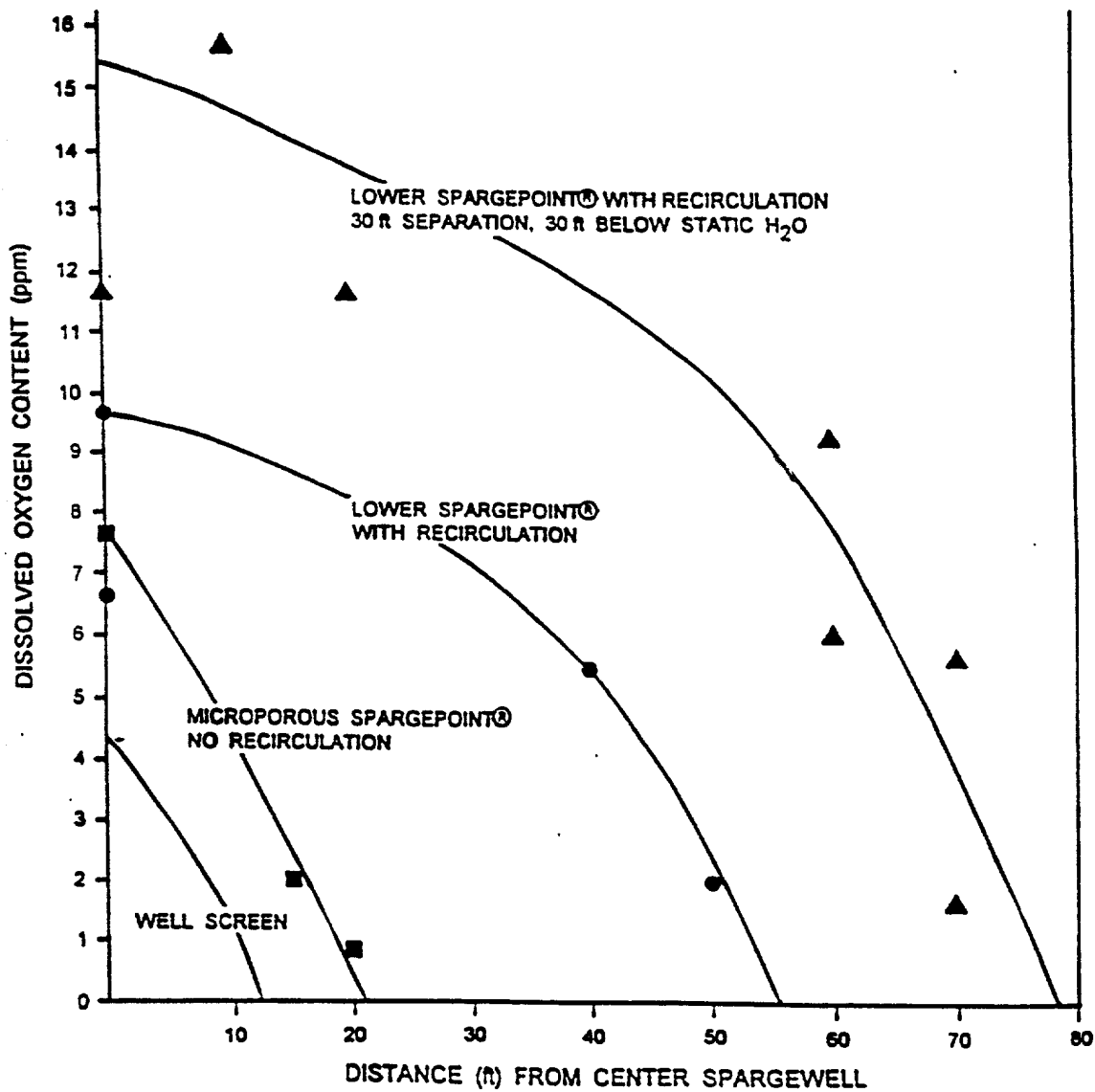


FIG. 39



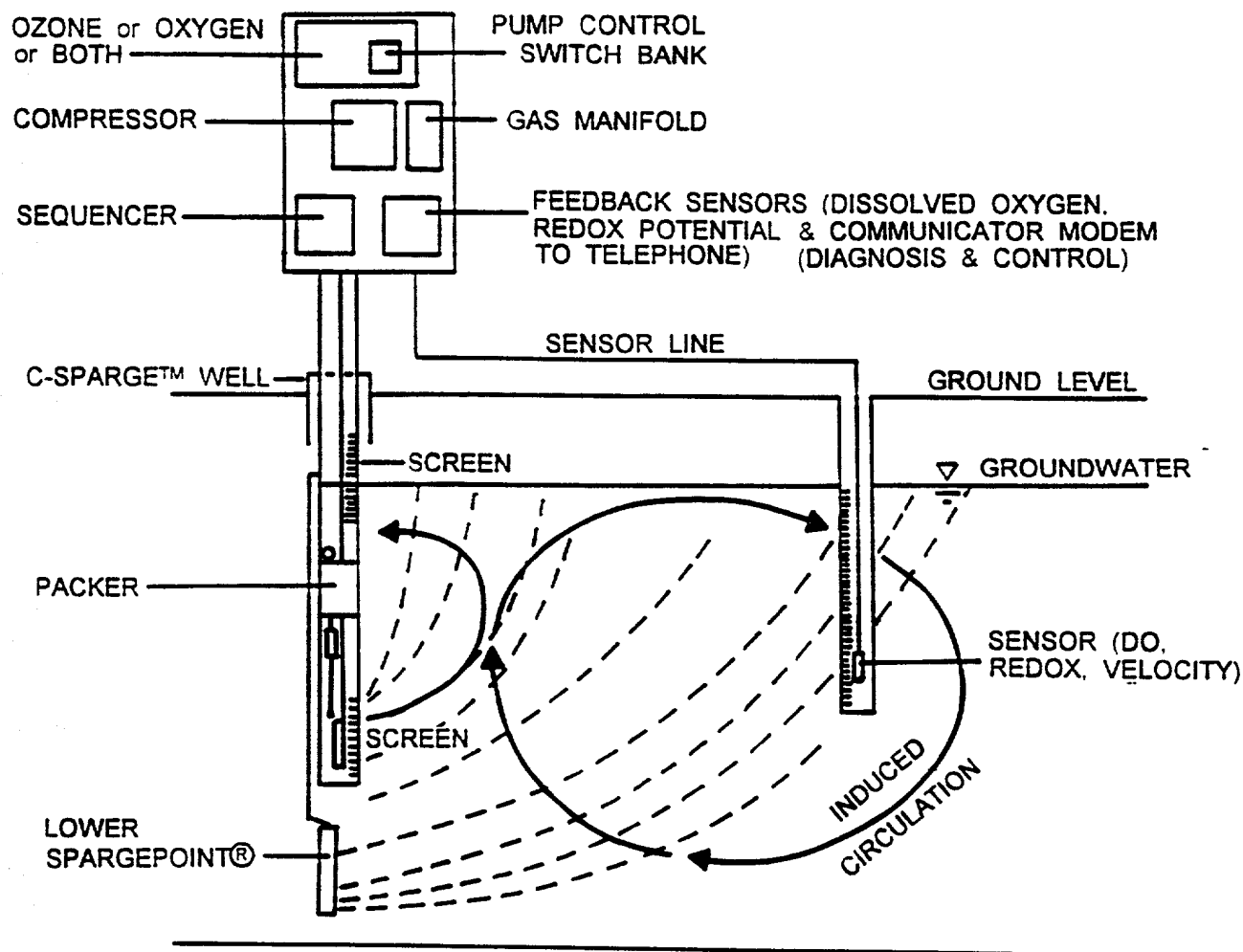


FIG. 40